PROCEEDINGS
OF THE
Hawaiian Entomological Society

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JANUARY 12, 1953

The 565th meeting was held at the H.S.P.A. Experiment Station on Monday, January 12, at 2:00 p.m., with President Weber in the chair.

Members present: Balock, Barker, Bess, Bianchi, Chilson, Clagg, Ford, Fullaway, Haramoto, Hardy, Hoyt, Joyce, Keiser, Krauss, Look, Maehler, Messenger, P. Nakagawa, Newell, Nishida, Pemberton, Randall, Rosa, M. Sherman, Suehiro, Tanada, Tamashiro, Tuthill, Van Zwaluwenburg, Weber and Wilton.

Visitor: Lt. F. Robert Du Chanois, U.S.N.R.

Donald F. Wilton was elected a member of the Society, and Lt. F. R. Du Chanois was nominated for membership.

NOTES AND EXHIBITIONS

POLYPLAX SERRATA (Burmeister)—Dr. Joyce exhibited a slide mount of a female anoplurid which he had identified as this species, one not previously recorded from these islands. The specimen is from the mouse *Mus musculus,* and was in the slide collection of the H.S.P.A. Experiment Station, labeled "ex white mouse, U.S. Army, Oahu, March, 1945." *P. serrata* is readily separated from other closely related species of the genus by the fact that the dorsal marginal seta of the fourth paratergite is about three times the length of the ventral seta. The louse was no doubt brought in on importations of laboratory mice, and may be more prevalent here than records indicate.

AGONOXENA ARGAULA Meyrick—Mr. Krauss reported that larvae of this moth, which attacks coconut and other palms, were found on coconut leaves at Lawai-Kai, Koloa, Kauai, in December, 1952, by Stephen Au. This is the first record of this species from Kauai.

EPINOTIA LANTANA (Busck)—Mr. Krauss pointed out that this is the correct name for the olethreutid moth introduced by Koebele into Hawaii from Mexico in 1902 to help control lantana. It has previously been known here as *Crocidosema lantana;* the new name was given the moth by Heinrich (Proc. U.S. Nat. Mus. 79, no. 2879:10-11, 1931).

CLIDEMIA HIRTA—Mr. Krauss reported that this noxious weed (family Melastomaceae) has become established in the forest reserve at Kaukonahau, Wahiawa, Oahu. Karl Korte, a forester of the Board of Agriculture and Forestry, says that he first noticed the plant in this region in 1941. It is now found in an area somewhat less than one mile square. The plant was a serious pest on grazing land in Fiji some years ago, but was brought under effective control by the thrips, *Liothrips urichi* Karny, introduced from Trinidad, B.W.I., by H. W. Simmonds in 1930. The plant is known in Fiji as "Koster's curse"; it is native to the region from Mexico and the West Indies south to Bolivia and southern Brazil. It has black, juicy berries, and the seeds are spread by the birds. Dr. Pemberton added that the difference in *Clidemia* infestation in Fiji was most striking between 1920, when the plant made certain areas impenetrable, and 1937, after the plant had been all but eliminated in some sections by *Liothrips.*

PYRAUSTID LARVAE AS BIRD FOOD—Mr. Maehler reported that a shipment of nightingales recently passed through Honolulu en route to the mainland United States from Japan. Accompanying them, to serve as food for the birds in transit, were some 150 living larvae of the lepidopterous family Pyraustidae. The insects were confiscated.

PRAYS sp.—Mr. Chilson reported that larvae of hyponomeutid moths caught by Mr. Ford among *Pelea* berries from the Waianae Mountains, Oahu, had been determined by H. W. Capps as *Prays* sp. Later, the species was believed to be *P. fulvocanellus* Walsingham, which Dr. Swezey (in manuscript) records as feeding in buds and seeds of *Pelea.*

EURYTOMA ORCHIDEARUM (Westwood)—Mr. Look reported that C. J. Davis found the Cattleya fly for the first time on the island of Hawaii in a nursery at Kukuau, near Hilo, on December 29, 1952.

SPALANGIA LANAIENSIS Ashmead—Mr. Fullaway reported that this pteromalid parasite of drosophilid flies has recently appeared in fly material from various island localities. On November 25 and 26, 1952, it was reared from material from mountain apple (*Eugenia malaccensis*) and *Momordica* from Waimea and Pakala, Kauai. On December 10 it was obtained from guava material from Haiku, Maui, and December 15-17, 1952, from Damson plums (*Chrysophyllum oliviforme*) and guavas from Wahiawa, Waianae, and Honolulu, Oahu.

TETRASTICHUS DACICIDA Silvestri—Mr. Fullaway reported the recovery for the first time on Kauai of this eulophid parasite of *Dacus dorsalis.* It was bred from wild *Momordica* collected November 19, 1952, at Hanapepe and Makaweli.

PARASITE OF COCONUT RED SCALE—Attention was called to a paper by Dr. R. L. Doutt (Ann. Ent. Soc. Amer., 43:501-507, 1950) in which *Anabrolepis oceanica* is described from the Caroline Islands. This is an encyrtid parasite of *Furcaspis oceanica* Lindinger, the coconut red scale. Also described in the same paper is an aphelinid, *Ablerus palauensis,* presumed to be hyperparasitic on *Anabrolepis.*

Oreocrabro abnormis (Blackburn and Cameron)—Mr. Weber exhibited a long series of both sexes of this rather uncommon wasp, taken January 10 at the base of Mt. Kaala in the Waianae Mountains, Oahu. The male is remarkable for the strongly developed tooth on the antennae.

Petrobia sp.—Dr. Martin Sherman reported that on May 8, 1951, an infestation of this tetranychid mite was noted on sweet potato plants in an experimental area at Poamoho, Oahu, which had been sprayed with DDT on April 6. The unsprayed plants were free from this large black mite. Sulfur was added to subsequent DDT sprays, and by June 1 the infestation had been controlled. This is the first record of this genus from the islands. Dr. I. M. Newell, who identified the mites, said that, as far as he knows, this is the first record of any mite of this genus building up populations on plants sprayed with DDT.

FEBRUARY 9, 1953

The 566th meeting was held at the H.S.P.A. Experiment Station on Monday, February 9, at 2:00 p.m., with President Weber in the chair.

Members present: Balock, Bess, Bianchi, Carter, Chilson, Christenson, Dresner, Du Chanois, Fullaway, Hinman, Hoyt, Keck, Krauss, Look, Messenger, Mitchell, Pemberton, Sakimura, Tanada, Tuthill, Van Zwaluwenburg, Verma and Weber.

Visitors: David H. Bixby and George E. Bohart.

Lt. F. R. Du Chanois was unanimously elected a member of the Society, and Dr. Herbert Lamprecht, Director of the Plant Breeding Institute of Landskrona, Sweden, was nominated for membership.

Notes and Exhibitions

Dr. Bess exhibited two bulletins recently published by the Entomology Department of the Hawaii Agricultural Experiment Station, one on garden pests, the other on household insects.

Dacus dorsalis Hendel—Dr. Tuthill reported that adult males of the oriental fruit fly were attracted to drying twigs of mokihana (*Pelea* sp.) which had been brought into the laboratory to rear out psyllids present on them. Although quite dry, the foliage was still fragrant. The flies were evidently drawn from some distance, as there was no possible breeding source within 50 yards, and no probable source for a much greater distance.

Corixids in ocean water—Dr. Tuthill reported adult corixid bugs (no nymphs) in the Ala Moana yacht basin; they were not in tidal pools.

Coptotermes formosanus Shiraki—Mr. Keck reported that a carton nest of the subterranean termite, some 16 inches in diameter, was found recently at Pearl Harbor, in a cavity in a manhole made for the installation of underground cables. The carton was examined in the hope of finding a primary queen. Instead, 137 supplementary queens were found; these were exhibited, together with a primary queen from another source, and eggs of *C. formosanus*. A note from Mr. Rosa reported a large flight of *C. formosanus* on Keeaumoku Street, Honolulu, at about 10 in the morning of January 13, an overcast day.

PROTAETIA FUSCA (Herbst) —Dr. Pemberton exhibited rose buds almost completely eaten by adults of this immigrant beetle; they came from the rose gardens of Mr. Watanabe at Koko Head, Oahu. The beetle was reported as causing much damage to roses in this commercial garden; it is the first record of economic damage by this insect in Hawaii. It was recalled that *Scolia vollenhoveni* Saussure parasitizes the larvae of *P. fusca* in Malaya. Mr. Bianchi reported finding *Protaetia* larvae in dust-dry soil near Diamond Head.

OPIUS sp.—Mr. Fullaway exhibited a new species and several new varieties of *Opius,* which he intends to describe.

ENCYRTUS LECANIORUM (Mayr) —Mr. Chilson reported that a single female of this parasite of scale insects was taken at the Honolulu Airport on blossoms of *Alpinia purpurata* originating in Honolulu, on September 9, 1952, by E. H. Davidson. This is the first time this species has been recorded in Hawaii; identification was by B. D. Burks of the U.S. National Museum.

PSEUDOCOCCUS NUDUS Ferris—Dr. Hoyt reported that this insect, described from a single specimen of *Dubautia* from Haleakala, Maui, (in Zimmerman: "INSECTS OF HAWAII," 5:235, 1948) was found in large numbers in the crater of Haleakala in June, 1951. On October 29, 1952, Dr. Hoyt took a single specimen on *Dubautia arborea,* in Kaula Gulch, two miles above Keanakolu, Hawaii. This is a new island record for this endemic species.

ORCHIDOPHILUS ATERRIMUS (Waterhouse) —Mr. Krauss reported that Mr. Davis took this orchid weevil in Hilo, Hawaii, on *Phalaenopsis* plants, last November. Apparently the insect is rare on Hawaii; it was first taken on that island in Hilo by L. W. Bryan in April, 1930 ("PROCEEDINGS," 7:376, 1941[1]).

BRACHYMERIA AGONOXENAE Fullaway—Mr. Krauss reported the rearing of this chalcid from *Agonoxena argaula* Meyrick, by Stephen Au on Kauai, in January, 1953. This is a new island record for this parasite, introduced from Samoa in 1948, and within a year established on Oahu.

LEMA CALIFORNICA Schaeffer—Mr. Bianchi reported unusual numbers of this chrysomelid beetle on Jimson weed which now occupies areas of "new" land in the Pearl Harbor region. These areas have recently been filled in by deposits of soil from cane cleaners at nearby sugar mills.

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[1] Here, and elsewhere in this publication, "PROCEEDINGS" refers to the Proceedings of The Hawaiian Entomological Society.

Dr. George Bohart gave an interesting account of his two months on the Ryukyus and nearby islands. The main objective of his trip was the study of a filarial disease of horses which occurs on some of the Ryukyu Islands, and which often causes blindness in its victims. Unlike most filarial diseases, this one tends to produce open sores. Only a brief time was available for work before the transmission season of the disease ended, but Dr. Bohart's observations implicate as a vector an undescribed *Musca,* in the mouthparts of which he found adolescent filarial worms. Infection probably takes place by way of the open sores, and by the rasping of unbroken skin by the heavily-armed mouthparts of the adult flies.

Malaria occurs in the Ryukyus inland from the coast. In rice paddies the vector is *Anopheles sinensis* Wiedemann, while in the foothill streams the species is *A. minimus* Theobald. After discussing some of the important crop pests, Dr. Bohart told of a non-social, gregarious, ground-nesting bee, *Anthophora* sp., a number of pupae of which he is bringing to the mainland United States in the hope of improving pollination of various crops. A survey made by Dr. Bohart revealed about 1,800 insect species in the Ryukyus. Of these the Diptera comprise some 300 species, the Coleoptera and Hymenoptera some 250 each, the Lepidoptera about 200 (butterflies are numerous), and the Hemiptera about 100 species.

MARCH 9, 1953

The 567th meeting was held at the H.S.P.A. Experiment Station on Monday, March 9, at 2:00 p.m., with President Weber in the chair.

Members present: Adachi, Balock, Barker, Bess, Bianchi, Chilson, Chong, Clagg, Dresner, Fullaway, Gressitt, Hinman, Hoyt, Joyce, Keck, Keiser, Krauss, Look, Maehler, Messenger, P. Nakagawa, Rosa, Suehiro, Tamashiro, Tanada, Tuthill, Van Zwaluwenburg, Verma and Weber.

Visitor: Miss Setsuko Nakata.

A communication was read from the Hawaiian Academy of Science, inviting affiliation by the Society with the Academy for mutual benefit. Dr. Herbert Lamprecht was elected a member of the Society, and Mr. L. J. Dumbleton was nominated for membership.

NOTES AND EXHIBITIONS

CARPET BEETLES—Dr. Bess exhibited wood damaged by *Cryptotermes brevis* (Walker); the termites had been killed by fumigation, but the old galleries were occupied by larvae and adults of an *Anthrenus,* probably *scrophulariae* (L.). The larvae were feeding on the dead termites present in the galleries.

COLLECTING IN THE CAROLINES—Dr. Gressitt told of his 11-weeks visit to the Caroline Islands, during which all the high islands were visited, and a few of the atolls. A few days were also spent on Guam, and brief stops made on Johnston, Wake and Kwajalein Islands. The main purpose of the trip was to fill gaps in the collections of the Insect Survey of Micronesia. Particular emphasis was placed on light-trapping, especially at high altitudes, the use of the Berlese funnel and beating of native vegetation at high altitudes. Over 60,000 specimens were taken, the bulk of them minute night-flying insects, soil arthropods and small plant-feeding insects.

Six days were spent on Yap. Adults of three new caddis flies, previously known only from larvae, were taken, but the mayfly (the only record from Micronesia), known only from a nymph, was not obtained. Though Yap has been said to be a continental island and has more aquatic insects than other parts of Micronesia, it appears poor in some of the conspicuous groups such as the weevils and other forest-feeding beetles.

Palau was visited for three weeks, part of which was spent reviewing the *Oryctes* situation. This pest, the coconut rhinoceros beetle, is dwindling in numbers as a result of gradual depletion of larval food, its own feeding and the work of the control crew. Palau has the most varied fauna in Micronesia, and probably the richest, though it has fewer endemic genera than Ponape. Palau has four species of hispid beetles, whereas not more than one has been found in any other island group of Micronesia, and none on Guam. Three of the four hispids are *Oxycephala,* all found within a few yards of each other on Babelthuap; one, a new species first taken on this trip, occurs on *Freycinetia,* and the other two on *Pandanus* of two types. The more common of the *Pandanus* hispids also feeds in *Flagellaria, Pleomela* and *Freycinetia.* The fourth species is *Brontispa palauensis* (Esaki and Chujo), described by Barber in 1950 as *B. yoshinoi,* and studied under that name by Hagen and Doutt (Ann. Ent. Soc. Amer., 43:311-319, 1950). The first description of *B. palauensis* in English appeared in 1943 (Mem. Fac. Sci. and Agr., Taihoku Imp. Univ., 24:322). The other two hispids in Micronesia are *Brontispa chalybeipennis* (Zacher) which occurs in Ponape, Kusaie and other Marshall Island atolls, and *B. mariana* Spaeth. The latter is probably native to the Truk area and may have been introduced into the Marianas, where it is known as the Saipan coconut beetle.

Truk, where three weeks were spent, proved disappointing, and appears much poorer than the other high island groups; it is particularly lacking in weevils and other types characteristic of Guam, Palau and Ponape. The Truk islands are sunken peaks of a large island and the native vegetation is nearly gone. Ponape, visited for nearly three weeks, is the highest of the large islands, and is rich. Rain forests and swamps on the mountain summits are conspicuous. Damsel-fly nymphs were taken in *Pandanus* and *Freycinetia* axils; large weevils, tettigoniids and gryllids were taken in *Pandanus* on the mountain tops.

Kusaie, where only three days were spent, is similar to Ponape, but with steeper mountains and sharper ridges. It is richer than has been assumed, and probably has many endemic species. Dr. J. F. Gates Clarke is spending four months collecting there. The eastern Caroline atolls, Mokil and Pingelap, visited briefly are probably not very different in their insect fauna from the western Caroline atolls visited recently by N. L. H. Krauss.

Dr. Gressitt announced that the Bishop Museum has received a grant of $15,200 from the National Science Foundation to help support the project "INSECTS OF MICRONESIA" for the next 18 months. The project is thus now transferred from the Pacific Science Board to the Bishop Museum, and Dr. Gressitt has joined the Bishop Museum staff. Under the new director, Dr. Alexander Spoehr, it is planned to expand the role of entomology in the Bishop Museum in the near future. A fine collection from the southern Ryukyu Islands was recently left at the Museum by Dr. George Bohart. It is hoped that the Museum may prove useful to all local entomologists in helping to identify specimens or in supplying information.

RECENT BEETLE CAPTURES—For Mr. Ford, Mr. Maehler reported the following recent captures of beetles: *Neoclytarlus chenopodii* Perkins, 13 specimens bred February 18, from *Chenopodium oahuensis,* 1,800 ft., Palikea, Waianae Mountains, Oahu. *Plagithmysus cuneatus* Sharp, 12 specimens, on *Sapindus oahuensis,* 2,000 ft., Palikea, Oahu, February 26; the last record of the capture of this species was by Dr. Swezey in February, 1937. Also reported is the capture of an unidentified curculionid, apparently new to the Hawaiian Islands. It was first collected at Barber's Point, Oahu, in March, 1950; an additional series of 28 specimens was collected at Damon Tract and Hickam Field in January, 1953. Both adults and larvae were feeding on *Portulaca.*

AGONOXENA ARGAULA Meyrick—Mr. Krauss reported that larvae of this moth were found by C. J. Davis on coconut leaves between Kailua and Keauhou, Hawaii, on March 3, 1953. This is the first record of this insect from the island of Hawaii.

ANACAMPTODES FRAGILARIA (Grossbeck)—Mr. Tanada reported rearing this moth from larvae on broccoli on the University of Hawaii campus, and at Waimanalo experimental farm, during January and February. The insect was fairly abundant and was the most numerous species on broccoli with the exception of *Pieris rapae* (L.).

ACHETA DOMESTICA (L.)—Mr. Chilson reported that a single female of this cricket, determined by A. B. Gurney, was found by S. P. McNeil at the Honolulu Airport in a box of croton leaves being sent from Honolulu to California, August 20, 1952. It is not certain that the insect is established here. The remarks that follow are paraphrased from Dr. Gurney's letter: Keys out to *A. conspersa* (Schaum) (Zimmerman: "INSECTS OF HAWAII," 2:129, 1948) but is decidedly larger, the occipital pale band is much wider, and pronotal coloration and other features are different. This species may be a newly established one in Hawaii, and a further investigation might be justified, as *domestica* is of some importance in buildings . . . in addition to being a species of general interest.

Mr. Clagg spoke of a recent trip to Midway Island, where he spent nine days. It is his opinion that there are more insect species now established there than were known at the time of the last published survey made some years ago.

EGG LAYING OF PEREGRINUS MAIDIS (Ashmead) —Mr. Verma reported that during a study of the corn leafhopper he found that about 90 per cent of the corn plants (then from 9 to 12 inches high) in the field had ant burrows near the roots. The majority of the *P. maidis* were found within these burrows, some of them as much as five inches below the soil surface. Upon examination of corn plants under a binocular microscope, it was found that over 95 per cent of the leafhopper eggs were laid either in the corn stem below the soil surface, or in the corn roots themselves. Nymphs were observed hatching from these eggs.

Further study revealed that *P. maidis* also lays the eggs in nutgrass (*Cyperus rotundus*) roots. Eggs were found in nutgrass roots only in corn fields and particularly in plants adjacent to corn plants. No nymphs or adults of the bug predaceous on leafhopper eggs, *Cyrtorhinus mundulus* (Breddin), were found in the ant burrows or even on the above ground parts of the young plants. In view of the fact that nymphs and adults of *C. mundulus* die if starved for from 18 to 26 hours, it becomes apparent why corn leafhopper populations build up so rapidly while *Cyrtorhinus* often is scarce. There appears to be a close dependence of the subterranean population of *P. maidis* on the ants in a corn field because no *Peregrinus* population was found where the ant burrows were absent.

APRIL 13, 1953

The 568th meeting was held at the H.S.P.A. Experiment Station on Monday, April 13, at 2:00 p.m., with President Weber in the chair.

Members present: Adachi, Balock, Barker, Bess, Bianchi, Chong, Clagg, Du Chanois, Fullaway, Gressitt, Haramoto, Hinman, Hoyt, Ito, Joyce, Keck, Keiser, Look, Maehler, Messenger, P. Nakagawa, Newell, Pemberton, Rosa, M. Sherman, Suehiro, Tamashiro, Tanada, Tuthill, Van Zwaluwenburg, Verma and Weber.

L. J. Dumbleton was unanimously elected as a member of the Society.

NOTES AND EXHIBITIONS

TEFFLUS HACQUARDI de Chaudoir—Miss Chong reported that one female of this carabid beetle was found alive on March 4, 1953, by a Mrs. Wist at Kaneohe, Oahu, not far from the point where the species was originally released on June 3, 1952. The individual is believed to be the progeny of the original released material for it bore no markings such as were applied to all the released specimens.

OPIUS KRAUSSII Fullaway—Miss Chong reported the recovery of this introduced parasite of fruit flies on the island of Hawaii. About ten, evenly divided as to sex, were bred by Mr. Susumu Nakagawa from Jerusalem cherries collected March 8, 1953, at Waikii, Hawaii. The parasite had earlier been recovered on Maui ("PROCEEDINGS," 14:361, 1952).

TAROPHAGUS PROSERPINA (Kirkaldy) —It was reported that the taro leafhopper was reported for the first time from Waipio Valley, Hawaii, by C. J. Davis, who found it there on November 26, 1952. It had earlier been found in Hilo, Hawaii, by W. C. Look on September 19, 1947. Of 65 acres of taro in Waipio Valley, only five were found to be infested. The egg predator *Cyrtorhinus fulvus* Knight was released in the infested area: 2,455 in December, 1952, and 433 the following March.

NEW RECORDS FROM THE ISLAND OF HAWAII—For Mr. Davis the following, all new records for the island of Hawaii, were reported:

EURYTOMA ORCHIDEARUM (Westwood), the Cattleya fly, was reported in Hilo on December 27, 1952, by the Reverend Masao Yamada. This was confirmed when a moderately heavy infestation was found December 29 in the Kukuau district of the town. It has since been found in upper and lower Kaumana and at Piihonua, but not in any other parts of the island.

OESTRUS OVIS L., the sheep nostril, or bot, fly, was identified by Dr. D. Elmo Hardy from maggots obtained from a goat at Kahuku Ranch in March, 1953. The record of a goat as host is considered very unusual, particularly since it occurred in the horn of the animal, not in its nasal passages.

CEROPLASTES CIRRIPEDIFORMIS Comstock—Dr. Sherman reported that this barnacle scale, tentatively identified as such by Harold Morrison, was collected on December 13, 1952, at the faculty housing area, Manoa Valley, Honolulu, on the stems of *Passiflora edulis flavicarpa*. This is the first record of this scale in the Hawaiian Islands.

MITES ON COFFEE—Dr. Sherman reported that on April 1, 1953, he noted that the minute pits at the base of the veins on coffee leaves in Kona, Hawaii, were often occupied by mites identified by Dr. I. M. Newell as belonging to the family Tydeidae. The pits were not caused by the mites, which had only taken advantage of them to hide. Dr. Newell added that examination of coffee leaves on Oahu shows the presence of similar mites of a species different from the ones found in Kona. The group in part has recently come to be considered phytophagous.

VANDUZEA SEGMENTATA (Fowler) —Mr. Van Zwaluwenburg reported finding this membracid in all stages on *Erigeron*, at Mapulehu, Molokai, on March 20. This is a new island record for the species.

DROSOPHILA HYDEI Sturtevant—Mr. Clagg reported that drosophilid flies, mostly of this species (identified by Dr. Hardy), were recently so numerous in Navy housing residences as to be a nuisance. The flies are believed to have bred in unusual numbers in cactus which was cut down in the development of the nearby Aliamanu housing area.

MUSCINA ASSIMILIS (Fallén) —Dr. Hardy reported a new fly record for the Territory. This fly, identified by C. W. Sabrosky, was reared from larvae in cabbage at Kamuela, Hawaii, by A. Kawasaki in March. The species is widely distributed throughout the Palearctic, Nearctic and Neotropical regions, and has been reported in the literature as at times causing fatal myiasis in nesting birds. This is the second species of *Muscina* known to occur in Hawaii; our species may be separated by the following characters:

Palpi, tibiae, and apical half of femora yellow	*stabulans* (Fallén)
Palpi and legs entirely black	*assimilis* (Fallén)

The *Muscina* are distinguished from other muscoid flies by their robust bodies, by having the arista plumose on both sides, by the evanescent anal vein not reaching the wing margin, by the short, thick proboscis and fleshy labellum, and by having vein M_{1+2} broadly rounded at the apex, not bent forward at a sharp angle.

Dr. Bess commented on the extremely low flea populations reported on living trapped rats in the Hamakua district of Hawaii. Dr. Pemberton pointed out that although fleas have always been few on field rats (*Rattus hawaiiensis*) in that district, they are abundant on the rats about houses (the Norway rat). He added that damage by the Norway rat has always been high on the islands of Lanai and Kauai, the two islands in the Hawaiian group on which the mongoose has never been introduced.

Dr. Gressitt announced that preceding the XIVth International Congress of Zoology in early August, 1953, in Copenhagen, the International Commission on Zoological Nomenclature will hold a Colloquium on Nomenclature to complete the revision of various parts of the International Code of Zoological Nomenclature, to prepare a final new draft to be presented for approval to the International Congress, and to make various recommendations on opinions and interpretations of the Code. This is to be a significant meeting as many important points brought up at the last Congress, or later, in the Bulletin of Zoological Nomenclature, will be acted upon.

Mr. Maehler reported that Dr. W. W. Wirth, a member of this Society, had recently been awarded the Meritorious Award of the U.S. Department of Agriculture for scientific achievement.

IRIDOMYRMEX HUMILIS (Mayr) —Mr. Ito said that recently Mr. H. Matsui of the Hawaiian Pineapple Co. reported finding large colonies of this ant along the edge of Field 4109, one of those recently taken over from sugar production in upper Waipio, Oahu. Checking the area toward the end of March, the ant was found well established along some 675 feet of the field's margin, completely overrunning the banks of nearby Reservoir 36, with the exception of one point where a colony of the fire ant (*Solenopsis geminata rufa* [Jerdon]) persisted. The Argentine ant has followed the ditch about 500 yards makai (seaward) of the reservoir to the intersection with the Waipio radio station road.

The fact that the ant has not advanced across the paved road into Panakauahi Gulch, except via a culvert, seems to indicate that the infestation is an isolated one centering at the reservoir. *Pheidole* ants predominate in the surrounding areas, notably in the now abandoned camp site some 750 yards below the reservoir.

Mr. Ito also reported the presence of the Argentine ant in Wahiawa Heights, Oahu, where the first report was of an infestation in a house on California Ave. The ant is said to have been in this area for from two to four years. Surveying along California Ave., the ant was found on the south side of the street as far down as Uluwehi St., above Leilehua High School, and up to the end of the avenue into the Koolau forest area. The spread into the fenced-in 13th Replacement Camp site, presumably the original place of infestation, was not determined. North of California Ave. the ant has advanced into the forest region, beyond the edge of the Heights and on to the end of Dole Road. Apparently the ant has not yet invaded the Eames tract or the Wahiawa forest reserve areas.

PHYTOLIRIOMYZA MONTANA Frick—Miss Adachi reported that this recently described agromyzid was found in large numbers on April 3 at the radar station on Mt. Kaala, Oahu, on all plants swept with a net. Larvae of other species of this genus are known to be stem-miners in various plants, but none of the plants examined on the summit of Mt. Kaala showed any such injury.

MAY 11, 1953

The 569th meeting was held at the H.S.P.A. Experiment Station on Monday, May 11, at 2:00 p.m., with President Weber in the chair.

Members present: Adachi, Barker, Bess, Bianchi, Bryan, Chilson, Chong, Christenson, Ford, Fullaway, Gressitt, Haramoto, Joyce, Look, Maehler, Messenger, Newell, Pemberton, Rosa, Suehiro, Tanada, Tuthill, Van Zwaluwenburg, Verma, Weber and Wilton.

The name of Miss Shizuko Maeda was proposed for membership.

PAPERS

Miss Adachi presented the following papers by title: "An Undescribed Cranefly from the Hawaiian Islands (Diptera: Tipulidae)," by Charles P. Alexander, and "A Revision of the Psychodidae of the Hawaiian Islands (Diptera)," by Larry W. Quate.

NOTES AND EXHIBITIONS

PARAFANNIA MOLLUSCOVORA Bohart—Dr. Joyce reported that a specimen of this fly was collected on September 11, 1952, at Fort Armstrong, Honolulu, from decaying shellfish near the beach. This phorid genus has not previously been reported from the Islands; it has been known only from Guam, and breeds abundantly in decaying shellfish. The species is characterized by its sooty black color, unbranched radial vein, the clypeus produced at the oral margin, and the hind tibia with a spine on its outer surface near the base.

Diploneura cornuta Bigot—Dr. Joyce reported that this species of phorid fly should also be recorded as occurring on Oahu, numerous specimens in his collection dating back to July 21, 1947. The species is worldwide in distribution in tropical and temperate zones, and breeds extensively in decaying vegetables and meat, in much the same situations as *Megaselia scalaris* Loew. This species is distinguished by having the preantennal bristles directed backward, the radial vein branched and by the presence of a stout pair of bristles on the outer surface of the middle tibia.

Phaenicia cuprina Weidemann and **P. sericata** (Meigen)—Dr. Joyce said that mention should be made concerning the occurrence of these species in the Hawaiian Islands. James ("Flies that Cause Myiasis in Man," U.S. Dept. Agr. Misc. Pub. 631:85-87, 1947) reports that both species are found here. Tanada et al. (J. Econ. Ent., 43:31, 1950) record a *Phaenicia* sp., near *pallescens* and *cuprina,* as breeding in poultry manure. There is no mention whatever in the "Proceedings" of *P. cuprina.*

Dr. Joyce finds *P. cuprina* one of the most abundant calliphorid flies here. In carrion-baited traps in lowland areas it usually outnumbers *P. sericata* 3 to 1. He has collected it in numbers from 1947 to date. It is felt that there must have been some confusion locally as to the identity of these species. *P. sericata* has been reported frequently in the "Proceedings" since 1912. It is worldwide in distribution whereas *cuprina* is principally Oriental and Australian in distribution; *cuprina* is the most serious of the sheep maggots in Australia. *P. sericata* is dark green, whereas *cuprina* is more cupreous; furthermore, in *cuprina* the metasternum is bare, while in *sericata* it is setose.

Coptotermes formosanus Shiraki—Dr. Bess commented on an unusually heavy flight of this termite in the early evening of May 1, in the mauka sections of Honolulu, particularly the Punchbowl area and Kalihi, at a time when "kona" conditions prevailed. Mr. Christenson remarked that at about the same time there was a heavy flight of this termite in Hilo. Various members commented on the possible correlation between the building of above-ground tubes and the preparation of colonies for flights. Mr. Rosa stated that *C. formosanus* occurs in parts of Honolulu as high as 700 feet elevation, on Alewa, Pacific, and St. Louis Heights and on Wilhelmina Rise.

Sybra alternans (Wiedemann)—Dr. Gressitt stated that examination of local material of this beetle, the identity of which was recently questioned, shows it is apparently correctly named. Apparently the first proper assignment of *alternans* to the genus *Sybra* was by Fullaway ("Proceedings," 5:76, 1922) on the basis of a determination by G. E. Bryant of the British Museum. The Gemminger and Harold catalogue and the Lacordaire "Genera des Coleopteres" both assigned "*alternans* Eschch." to *Sybra,* but that was not a valid name. Breuning (Festschr. 60 Geburtst.

E. Strand, 5:265, 1939) reassigned *alternans* (Wiedemann) from *Pterolophia* to *Sybra,* apparently in the belief that he was the first to do so.

Dr. Gressitt exhibited a copy of the newly issued "METHODS AND PRINCIPLES OF SYSTEMATIC ZOOLOGY," by Ernst Mayr, E. Gorton Linsley and R. L. Usinger, and mentioned "THE INSECT LIFE OF ARNO" by R. L. Usinger and Ira LaRivers, just published as No. 15 of the Atoll Research Bulletin. He added that Dr. J. F. G. Clarke, the microlepidopterist, arrived from Kusaie on May 8th; Dr. Clarke collected between 800 and 900 species of insects on Kusaie, the first collection of any size to be made there. These will be mounted except for the Microlepidoptera at the Bishop Museum.

NESOTOCUS GIFFARDI Perkins—This species, found on araliaceous trees, has until now been reported only from the Koolau Mountains on Oahu. Mr. Ford reported that in February, 1953, he took it for the first time in the Waianae range on *Cheirodendron,* at an elevation of 4,000 ft. on Mt. Kaala. Numerous exit holes and larvae were seen, but only the remnants of one adult beetle were found.

CHRYSOBOTHRIS near TRISTIS Deyrolle—Mr. Rosa exhibited an adult of this infrequently collected buprestid beetle, which bit a boy on the lip in Honolulu as he was walking along. The identification was originally made by W. S. Fisher ("PROCEEDINGS," 13:341, 1949); the breeding habits of this insect are not known.

CHEIRACANTHIUM sp.—Mr. Bianchi reported finding this spider, which has been known to bite man here several times in recent years, at Mapulehu, Molokai, on May 6, 1953. This is a new island record for the spider.

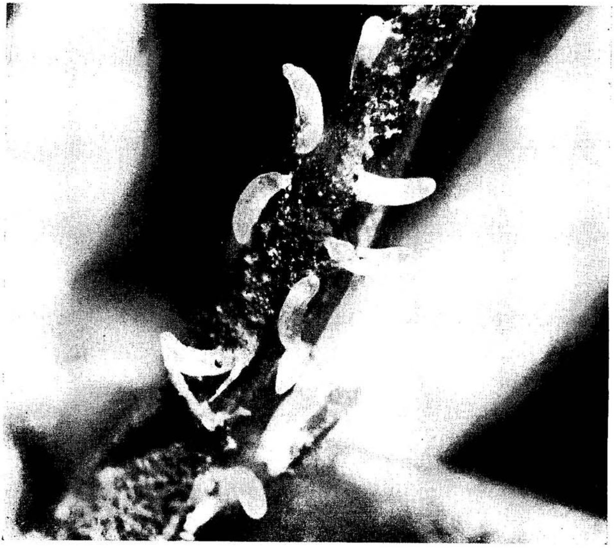
Mr. Maehler reported a recent case of endemic typhus, the first to occur on Oahu in two or three years. The disease is carried by fleas.

CYRTOPELTIS VARIANS (Distant) —Mr. Chilson gave the following report recently received from R. I. Sailer of the U.S. National Museum relative to interception "Hawaii No. 8219": ". . . this is the same species as that treated by Zimmerman "INSECTS OF HAWAII," 3:190, 1948 under the name *Engytatus geniculatus* Reuter, and the use of *C. varians* is not a misidentification as shown by Zimmerman. Zimmerman's usage is based on Usinger's treatment of the species in his paper on the Guam Heteroptera. His conclusions were based on a study of three species and I question the advisability of accepting this change until it is shown that the remaining species can be placed in one or another of the genera as he accepts them. Furthermore, *geniculatus* is a secondary homonym, and, depending upon action of the International Commission of Zoological Nomenclature, might have to be replaced by *varians.*"

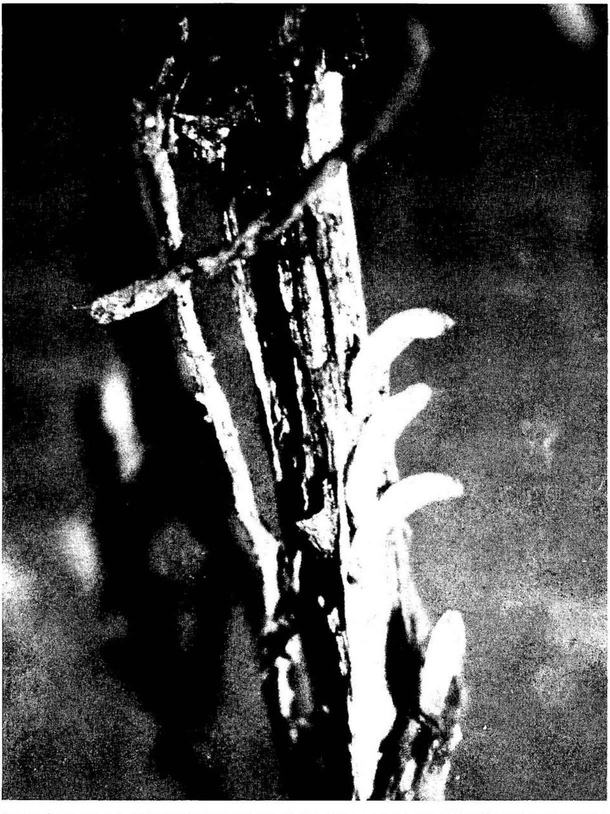
TENODERA AUSTRALASIAE (Leach) —Mr. Van Zwaluwenburg reported the unusual abundance of egg cases of this recently established mantid in a macadamia planting at Mokuleia, Oahu. On April 30, a dozen oothecae were collected in a few minutes, and scores more were seen, usually in the upper parts of the trees. This is a new area for this insect on Oahu.

CYRTORHINUS MUNDULUS Breddin—Mr. Verma reported that on April 20 he went to the Campbell farm at Mokuleia to collect corn leafhoppers. He noticed and collected a few leafhoppers in an old crop of corn that had been harvested once, which Dr. Hardy identified as *Perkinsiella saccharicida* Kirkaldy. On April 22, the locality was visited again and about a dozen sugar cane leafhoppers were collected in the same corn field. On a survey of the farm it was noticed that the corn had been sprayed with insecticides and no leafhoppers of any species were to be found except on this particular corn crop, which was the oldest and from which the effects of the insecticide had vanished. Some of the specimens were very teneral and seemed to have molted only a short time before. On examining sugar cane plantings near the farm, he noticed about a dozen individuals of the sugar cane leafhopper in two or three minutes. Adults and nymphs of *Cyrtorhinus* were also noticed on the sugar cane. A few of the adult sugar cane leafhoppers were kept in a cage on corn for about ten days.

This is the first record of the sugar cane leafhopper on corn.



Eggs of the corn leaf hopper in the root of a corn plant about 4 inches away from the soil surface. The eggs have been partly exposed by dissection.



Eggs of the corn leaf hopper in the root of the nut grass, exposed by dissecting the root.

JUNE 8, 1953

The 570th meeting was held at the H.S.P.A. Experiment Station on Monday, June 8, at 2:00 p.m., with President Weber in the chair and F. A. Bianchi as acting secretary.

Members present: Adachi, Barker, Bess, Bianchi, Chilson, Clagg, Du Chanois, Hardy, Haramoto, Hinman, Joyce, Keiser, Look, Messenger, Newell, Rosa, M. Sherman, Stone, Suehiro and Weber.

Visitor: David H. Bixby.

Miss Shizuko Maeda was elected a member and Mr. Bixby was proposed for membership. Mr. William Stone, of the Mexican Fruit Fly Laboratory, spoke briefly on recent work done in Mexico by his organization and others, chiefly the Rockefeller Foundation.

NOTES AND EXHIBITIONS

TENODERA AUSTRALASIAE (Leach)—Dr. Hardy stated that he was in possession of an ootheca of this insect which was said to have been found near Teacher's College, on the campus of the University of Hawaii.

NITIDULIDAE spp.—Dr. Hardy reported that during a recent trip to Lanaihale Mt. on the island of Lanai, he had found enormous swarms of what appeared to be the ordinary nitidulids of the lowlands at an elevation of 3,200 ft. above sea level. There was some discussion of their possible origin and manner of migrating.

NEOEXAIRETA SPINIGERA (Wiedemann)—Dr. Hardy reported that this fly was also abundant at the same time and in the same locality as the Nitidulidae.

CAENIS NIGROPUNCTATA Klapalek—Miss Adachi reported the presence of this mayfly in Kaneohe and Waialua, Oahu, on recent dates.

ASTEIA NUDISETA Sabrosky—Miss Adachi reported the finding of this fly in the Koolau Range. It has been known heretofore only from Mt. Kaala.

ANTHOMYIA BISETOSA Thomson—Dr. Hardy reported that the correct name for this species should be *illocata* Walker, according to recent information received from C. W. Sabrosky.

COPTOTERMES FORMOSANUS Shiraki—Mr. Clagg reported the presence of these termites at the Kaneohe Marine Corps Air Station, whence they never have been reported previously.

MICROLEPIDOPTERA—Mr. Clagg stated that on the nights of June 3 and 4 large numbers of a very small black moth had been caught in his light trap in the Pearl City Navy Housing Area. There was some discussion as to whether this might be the same species which is said to be curtailing the production of honey on Hawaii and Kauai through the destruction of the flowers of kiawe (*Prosopis*) on which the larvae are said to feed.

TROPISTERNUS LATERALIS BINOTATUS Walker—Mr. Bianchi read a note from Mr. Van Zwaluwenburg reporting that Hugh B. Leech of the California Academy of Science had called to his attention the fact that the proper name for the local variety of this hydrophilid beetle is *T. lateralis binotatus* Walker, not *dorsalis* Brullé, which is preoccupied.

PROCAMBARUS CLARKII (Girard)—A note from N. L. H. Krauss read by Mr. Bianchi stated that specimens of a crayfish collected in taro patches and in a stream in the Kaneohe area in March, 1953, have been determined as this species by Prof. Horton H. Hobbs, Jr., of the University of Virginia. This species has been introduced into the Las Vegas River, Nevada, the Santa Rosa area of California and Japan.

DELTOCEPHALUS SONORUS Ball—Mr. Bianchi read the following note from Mr. Pemberton: A single specimen of this cicadellid was caught in a light trap operated by the H.S.P.A. at Ewa, Oahu, in July, 1952. This is the first record of its occurrence in Hawaii. Since then a few have been caught in the same trap almost every month. On May 20, 1953, many specimens were to be found on Bermuda grass close to the trap at Ewa and at two other points some miles distant. Specimens were sent for determination to Mr. C. F. W. Muesebeck, who replied on May 14 that Dr. D. A. Young had identified the species as above. It was described from Arizona in 1900 (Can. Ent., 32:344). In U.S. Bureau of Entomology Bulletin 108, entitled "Leafhoppers Affecting Cereals, Grasses and Forage Crops," Herbert Osborn discusses this species on pages 79-80. He states that it is present on annual grasses from Florida to southern California and periodically occurs so abundantly in Texas, New Mexico and California as to be of probably economic importance.

JULY 13, 1953

The 571st meeting was held at the H.S.P.A. Experiment Station on Monday, July 13, with President Weber in the chair.

Members present: Adachi, Bess, Bianchi, Chilson, Christenson, Ford, Fullaway, Haramoto, Hinman, Joyce, Look, Newell, Nishida, Rosa, Steiner, Suehiro, Tanada, Tuthill, Van Zwaluwenburg, Verma and Weber.

Visitor: Miss Ruth H. Lippitt.

David H. Bixby was unanimously elected a member of the Society. A clipping from a mainland newspaper was read, announcing the conferring of an honorary degree of Doctor of Science upon Harry S. Smith, an honorary member of this Society, by the University of Nebraska. Miss Ruth Lippitt, who is in the islands to study the comparative morphology of the respiratory structures of dragonfly nymphs, was introduced.

NOTES AND EXHIBITIONS

Dr. Bess remarked on a fly problem which has developed locally because of the extensive use of poultry manure on lawns and flower beds.

NEW HOST RECORDS OF SCALE INSECTS—Mr. Look presented some new hostplant records from collections made on Alewa Heights, Oahu, the insect determinations having been made by Harold Morrison:

Aspidiotus lataniae Signoret; on stems of red ti, August 14, 1952.
Pinnaspis buxi Bouché; on leaves and stems of red ti, August 29, 1952.
Pseudaonidia clavigera Cockerell; on stems of gardenia, August 29, 1952.
Fiorinia fioriniae (Targioni-Tozzetti); on leaves and stems of *Ruta graveolens*, August 8, 1952.

TINEID ATTACKING KIAWE FLOWERS—Mr. Fullaway stated that on May 14, Stephen Au found the small yellowish green caterpillars of an unidentified tineid attacking the florets of kiawe (*Prosopis chilensis*) at Makaweli, Kauai. On May 27 it was reported in kiawe flowers at Puako, Hawaii; later it was found by Rosa and Van Zwaluwenburg near Nanakuli and near Koko Crater, on Oahu, and at Maalaea, Maui, on July 5. Mr. Bianchi said that he had reared the small black adult fly from flowers of "klu" (*Acacia farnesiana*) as well as from *Prosopis*. Mr. Fullaway added that associated with the tineid larvae on kiawe blossoms he had found a new chalcid of the genus *Haltichella*, possibly parasitic upon the caterpillars.

PARASITES OF PLUTELLA—Mr. Fullaway reported that a species of *Horogenes* (Ichneumonidae) and one of *Tetrastichus* (Eulophidae), both parasites of the cabbage moth, were received on February 7 from Dr. R. LePelley, collected at Nairobi, Kenya. These were released soon after their receipt, and on June 29, Q. C. Chock of the Board of Agriculture and Forestry found *Horogenes* established near Waimano Home, Oahu.

CYRTORHINUS LIVIDIPENNIS Reuter—Mr. Fullaway reported that this mirid bug, introduced without success some years ago, was imported again from Guam in several shipments between November, 1952, and January, 1953, to prey on the eggs of the corn leafhopper. On July 3, 1953, it was found in large numbers, and definitely established, at the Kaneohe Hospital, Oahu, by Kai Luke and M. Hironaka.

LIOTHRIPS URICHI Karny—Mr. Fullaway stated that this thrips, imported on April 22, 1953, from Fiji to attack *Clidemia hirta*, the weed newly established on Oahu, was found on June 9 to be established and breeding near Wahiawa, Oahu.

UNKNOWN GALL ON NATIVE BUSH—Mr. Fullaway stated that an undetermined native bush collected July 6 by William Crosby on Molokai had large stem-galls, presumably caused by insects as yet not identified. The globular galls were numerous and in some cases as much as 2 inches long.

PARANDRITA PERKINSI Sharp—This cucujid beetle, collected about 1896 and described (Fauna Hawaiiensis, 3:426, 1908) without hostplant record, was reported by Mr. Ford to have been collected on Kawiwi Ridge at 2,800 ft., on the leeward side of Mt. Kaala on July 16, for the first time since its original capture. Mr. Ford, who exhibited specimens, found it under bark of a large *Acacia koa* branch which had been cut about three weeks before.

LABROCERUS sp.—Mr. Ford exhibited larvae of this dermestid, remarking that almost nothing is known of the immature stages of the genus *Labrocerus*. The larvae he exhibited were found on Kawiwi Ridge on the leeward side of Mt. Kaala, Oahu, on July 16, in a stem of *Bidens* which had been thoroughly riddled by a variety of other insects. Amid the frass were considerable amounts of larval skins and bits of dead insects; the dermestid larvae were feeding on this material.

CACTOBLASTIS EGGS ATTACKED BY TRICHOGRAMMA—Mr. Van Zwaluwenburg reported that on June 9 he was shown egg sticks of the cactus moth, *Cactoblastis cactorum* (Berg), by H. W. Baybrook of the Parker Ranch, from which he later reared adults of a parasite identified by Mr. Fullaway as *Trichogramma minutum* Riley. The eggs had been collected in the vicinity of Kawaihae, Hawaii, for distribution about the ranch. *Trichogramma* is known to attack *Cactoblastis* eggs in the Argentine and in Australia, but the effectiveness of the moth as an enemy of cactus seems not to be seriously reduced.

CHEIRACANTHIUM sp.—Mr. Van Zwaluwenburg reported finding an adult female of this clubionid spider in a field near Hilo, Hawaii, on June 3. This is the first record of this spider on that island.

PACHYOPTHALMUS ALIENUS Dodge—Mr. Van Zwaluwenburg reported finding a nest of *Sceliphron caementarium* (Drury) at Wainaku, Hilo, on June 2, which contained, in addition to the spiders stocked by the parent *Sceliphron*, several empty puparia and two dead adults of this sarcophagid fly parasite of *Eumenes* and *Sceliphron*. It is a new record for the island of Hawaii. Identification of the fly was confirmed by Dr. Hardy.

BLOWFLIES IN HALEAKALA CRATER—Dr. Joyce reported that on a recent trip into the crater with Dr. Hardy, they had noted a considerable number of calliphorid flies, probably bred in goats killed by hunters and left to die in the field. At Paliku, at an elevation of 6,500 ft., the three most common species were *Calliphora vomitoria* L., *Phormia regina* (Meigen), and *Eucalliphora lilaea* (Walker). This combination of species is different from the species usually dominant at lower elevations in Hawaii.

SPILONOTA HOLOTEPHRAS Meyrick—Mr. Steiner, reporting on his recent trip to the Marianas, stated that in about 1936 it was thought that the guava trees on Guam were on the decline because of the work of this tortricid moth, which feeds on the buds and new leaves. Mr. Steiner's observations on Guam, Rota and Tinian lead him to believe that the guava is far from declining, as many of the trees were bearing fruit.

AUGUST 10, 1953

The 572nd meeting was held at the H.S.P.A. Experiment Station on Monday, August 10, at 2:00 p.m., with President Weber in the chair.

Members present: Adachi, Balock, Barker, Bess, Bianchi, Clagg, Chong, Ford, Fullaway, Haramoto, Keiser, Look, Maeda, Maehler, Messenger, Newell, Rosa, M. Sherman, Steiner, Tanada, Tuthill, Van Zwaluwenburg, Weber and Yasuda.

Visitor: Dr. R. Namba.

Dr. Namba, a graduate of the University of Minnesota in entomology, was introduced and made a few appropriate remarks. Charles Yasuda, a member who has just returned from active service in Korea, was welcomed back.

PAPER

Mr. Steiner presented by title a paper by Edgar Dresner: "Observations on the Biology and Habits of Pupal Parasites of the Oriental Fruit Fly."

NOTES AND EXHIBITIONS

ANOPLOLEPIS LONGIPES (Jerdon)—Mr. Clagg reported that specimens of this ant were collected at the Naval Supply Center, Pearl Harbor, Oahu, in December, 1950. The earliest previous record for this insect was April, 1952, when Mr. Ford found the ant at Barber's Point, Oahu ("PROCEEDINGS," 15:10, 1953). Mr. Clagg exhibited pest control handbooks issued by the Navy to its personnel.

EURYTOMA TEPHRITIDIS Fullaway—Dr. Bess stated that this eurytomid parasite of the pamakani gall fly which was described ("PROCEEDINGS," 15:33, 1953) from Oahu, also occurs on Maui, Molokai and Lanai. Specimens from those islands have been identified as this species by Mr. Fullaway.

TETRASTICHUS nr. SOKOLOWSKII Kurjudmov—Miss Chong reported that this parasite of the diamondback cabbage moth, imported from Nairobi, East Africa, in May, 1953, is now established on Oahu. Mr. Harry Nakao of the Board of Agriculture and Forestry collected host larvae on broccoli at the Waimano Home farm on July 26, and reared over 50 *Tetrastichus* from the material. Identification was made by B. D. Burks of the U. S. National Museum.

CORYTHUCA MORRILLI Osborn and Drake—For Dr. Hardy it was reported that this tingid bug, new to the Territory, was reported from Lualualei, Oahu, on July 24. A survey led by Dr. Hardy found the insect breeding on cockleburr (*Xanthium* sp.), *Verbesina encelioides* and *Ambrosia artemisiaefolia,* with cockleburr definitely preferred. The insect was found to occur from Makaha Valley, through Waianae and Brown's Camp, along the railroad as far as Ewa mill, and on the Kunia road. Mr. Bianchi added that he later found this tingid on *Verbesina* at Mokuleia, Oahu. It was described in Ohio Jour. Sci., 17:298, 1917. Identification was confirmed by H. G. Barber of the U.S. National Museum.

CHEIRACANTHIUM sp.—Mr. Ford spoke of a man who was bitten by this spider recently within the terminal building at the Honolulu Airport. A swelling quickly developed at the site of the bite on the hand and itching lasted for about 20 minutes.

PROTAETIA FUSCA (Herbst)—Mr. Maehler told of observing this beetle feeding on nectar of white ginger at Kahala, Honolulu.

SCOLIA RUFICORNIS F.—Mr. Van Zwaluwenburg stated that Mr. Owen had taken an adult of this parasite of the coconut beetle (*Oryctes rhinoceros* L.) on Koror in the Palau Islands early in August. This is definite proof of the establishment of this *Scolia* on Koror; it was last released on Babelthuap, five miles from Koror, in December, 1951.

Tillus notatus Klug—Mr. Van Zwaluwenburg reported finding this clerid beetle in some numbers on young cane plants at Lahaina, Maui; this is a new island record. This beetle, which occurs in Madagascar, Burma, the East Indies, China, the Philippines, Japan, Guam and the Moluccas, was first taken locally on flowers by Miss Suehiro in 1939 on the University of Hawaii campus. Later, Mr. Weber reported rearing it from wood of *Leucaena glauca* infested by bostrichids, and it was found resting on bean plants by Holdaway and Look.

Rodolia cardinalis (Mulsant)—Mr. Bianchi reported that of some 270 adults and pupae of this ladybird beetle sent by him and Mr. Rosa to Tutuila, Samoa, on July 13, 33 arrived alive and began feeding voraciously on *Icerya aegyptiaca* (Douglas) on breadfruit.

Liothrips urichi Karny—Mr. Fullaway exhibited potted plants of *Clidemia hirta* infested by this recently introduced and established thrips. Damage to the plants develops very soon after infestation by the thrips.

Ant biting swimmers—Dr. Tuthill spoke of ants, apparently carried offshore by wind and deposited on the water, biting swimmers at a windward Oahu beach.

SEPTEMBER 14, 1953

The 573rd meeting was held at the H.S.P.A. Experiment Station on Monday, September 14, at 2:00 p.m., with President Weber in the chair and F. A. Bianchi as acting secretary.

Members present: Adachi, Bianchi, Chong, Chilson, Clagg, Fullaway, Ford, Hardy, Look, Maehler, Newell, Nishida, Rosa, Steiner, M. Sherman, Stilton, Sakimura, Tuthill and Weber.

Visitors: R. Namba, Donald R. Johnson.

Mr. Donald Johnson, en route from Indonesia to America, was introduced by Dr. Steiner. Dr. Namba was proposed for membership in the Society. Dr. Hardy was unanimously elected to represent the Society in the affiliation committee of the Hawaiian Academy of Science.

Paper

Mr. K. Sakimura presented by title his paper: "A New Scolothrips from Hawaii."

Notes and Exhibitions

Mr. Clagg read excerpts from a recent article in "Science" on the toxicity of chlordane vapors, and much discussion of the subject ensued.

Zatropis tortricidis Crawford—Mr. Fullaway stated that specimens of this pteromalid parasite had been obtained in the laboratory from kiawe branches, infested by the recently established tineid kiawe moth, that had been collected by him at Makapuu, Oahu, during September, and by Mr. Van Zwaluwenburg at Waikapu, Maui, during August.

TRISSOLCUS MURGANTIAE Ashmead—Mr. Fullaway reported that this scelionid parasite, introduced in 1946, had been reared from harlequin bug eggs collected at Waianae, Oahu, during August. This is the first recovery of this parasite.

KIAWE MOTH—Mr. Fullaway stated that according to word just received from Dr. J. F. G. Clarke of the U.S. National Museum, the kiawe moth recently found in the Territory is probably a new species, and possibly a new genus and family.

LASIODERMA SERRICORNE (F.) —Mr. Ford spoke of a heavy infestation of this anobiid found by him at the Honolulu Airport on August 19. The beetles had almost completely consumed the contents of jars containing chili pepper, celery seed, poultry seasoning, potato flour and summer savory. A jar of summer savory was exhibited at the meeting.

DERMESTES spp. new to Hawaii—Mr. Ford exhibited specimens of *Dermestes* (?)*unicolor* Lepesme, *Dermestes frischii* Kugelann, and *Dermestes* sp., all determined by Hugh B. Leech of the California Academy of Sciences, and collected by Mr. Ford under dead chickens at Damon Tract, Honolulu, during May, 1953.

BLAPSTINUS sp. and **HYPOPHLOEUS** sp.—Mr. Ford also exhibited specimens of these tenebrionid beetles, also determined by Mr. Leech and constituting new records for the Territory. *Blapstinus* was first collected by Ford at Waikiki, Honolulu, in January, 1949, and has been found by him later at Barber's Point, Waianae, and Damon Tract. *Hypophloeus* was collected at Moanalua Gardens, Honolulu, in the borings of *Xystrocera globosa* Olivier in January, 1953.

TENODERA AUSTRALASIAE (Leach) —For Dr. Tanada, Dr. Hardy exhibited an ootheca of this mantid which had been collected on the University campus. This record extends the known range of this mantid with certainty, a previous record from the same locality being doubtful.

STENOPALMATUS LONGISPINA Brunner—A living specimen of this tettigoniid insect, the well-known Jerusalem cricket of the southwestern U.S., was exhibited by Mr. Chilson. It had been found crawling on the floor of a building at Hickam Field, Oahu, on August 14. It had probably crawled out of recently arrived baggage or freight and is not thought to be established in the Territory.

CORYTHUCA MORRILLI Osborn and Drake—Mr. Fullaway stated that recent tests made by the Board of Agriculture and Forestry show that this newly immigrant insect will feed on garden beans and *Chrysanthemum*. Mr. Bianchi stated that a recent survey made by Messrs. Van Zwaluwenburg, Rosa and Bianchi had shown the presence of this tingid on cockleburr between Makapuu Head and Waimanalo, but not between Makapuu Head and Honolulu.

LITHURGUS SCABROSUS (Smith) —Mr. Bianchi spoke of finding a large number of these megachilid bees making nests in a dead branch of an unidentified tree near Wailua Falls, Kauai, on August 19. This bee has been known from Oahu since 1900, but the present record appears to be the first from the island of Kauai.

AMMOPHORUS INSULARIS Boheman—Mr. Van Zwaluwenburg called attention to a recent publication (*"The Coleoptera of the Galapagos Islands,"* Occ. Papers Calif. Acad. Sci., No. XXII, 1953) in which the late Dr. E. C. Van Dyke discusses this tenebrionid beetle. The genus is well represented in the Galapagos, and *insularis,* described from Oahu in 1858, occurs on Chatham and South Albermarle Islands. Dr. Van Dyke suggests that it was brought to Oahu from Chatham in ballast by whaling ships early in the nineteenth century. The statement that the species is localized in the vicinity of Waikiki, Oahu, is no longer true, for specimens were taken by Dr. Swezey at Gilbert, west of Ewa, in 1925, at Koko Crater in 1932, and at Barber's Point in 1940. It was a "lost" species between the time of its first capture at Honolulu in the summer of 1852[2] by the naturalist (probably Anderson) of the Swedish frigate "Eugenie," and its rediscovery by Horace Sharp at Kaimuki on April 5, 1920. Blackburn's and Perkins' failure to find this species is rather surprising. *A. insularis* is present in the H.S.P.A. collection from the following islands in addition to Oahu: South Point, Hawaii (1951); Hawaiian Commercial & Sugar Co's plantation, Maui (1934), and Mapulehu, Molokai (1949).

Dr. Hardy and Mr. Bianchi discussed general entomological and botanical observations which they had made on the island of Kauai during the early part of this month. Mr. Bianchi pointed out that the Himalayan blackberry and *Myrica faya,* the firebush, have spread and increased alarmingly in the Kokee area since his last visit there six years ago.

Mr. Chilson presented the following notes:

LOBOMETOPON DIREMPTUS (Karsh). According to R. H. Arnett, this is the correct name for the tenebrionid previously known in the genus *Epitragus.*

ATTAGENUS UNDULATUS (Motschulsky). Mr. W. H. Anderson makes this correction in the generic name of the dermestid known here as *Telopes undulata.*

GONOCEPHALUM SERIATUM (Boisduval). This was collected on Johnston Island on June 1, 1952, by K. L. Maehler and is a new locality record.

MITRASTETHUS BROUNI Faust. According to R. E. Warner this is the correct name for *Mirastethus bituberculatus* (F.) ("PROCEEDINGS," 10:135, 1938). Warner says that *bituberculatus* is a name long used in error—a point not discovered by Zimmerman until after his paper was in print. This weevil was described in the Stettiner entomologische zeitung, 1889, p. 72.

TAENIOTHRIPS VITTICORNIS (Karny). This thrips, new to the Territory, was found on outgoing gardenia flowers and a mauna loa (*Canavalia microcarpa*) lei at the Honolulu Airport by E. H. Davidson and H. A. Woolford on June 28, 1952. It was described in Jour. Siam. Soc., 16:103, 1923. Identification was made by Miss Kellie O'Neill.

HAEMOLAELAPS MEGAVENTRALIS (Strandtmann). This laelaptid mite, new to the Territory, was collected during export inspection under the cap of a coconut being taken back to the mainland on January 8, 1953, by L. M. Chilson. This mite was previously known from the southern and eastern states. It was collected during typhus surveys on squirrels, rats, mice, and various birds.

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[2] Miss Bernice Judd, librarian of the Hawaiian Mission Children's Society, kindly supplied the information that the "Eugenie" came to Honolulu in 1852, making two visits, one from June 22 to July 3, and the other from August 25 to August 27.

OCTOBER 12, 1953

The 574th meeting was held at the H.S.P.A. Experiment Station on Monday, October 12, at 2:00 p.m., with President Weber in the chair.

Members present: Adachi, Bess, Bianchi, Carter, Chong, Christenson, Clagg, Du Chanois, Flitters, Fullaway, Ford, Gressitt, Hardy, Hu, Joyce, Keck, Keiser, Maeda, Newell, Nishida, Pemberton, Rosa, Sakimura, M. Sherman, Steiner, Suehiro, Tanada, Van Zwaluwenburg, Verma and Weber.

Visitors: C. P. Clausen and E. F. Bashor.

Dr. R. Namba was unanimously elected a member of the Society and C. P. Clausen was nominated for membership.

PAPER

Mr. Ford presented his paper "The Genus Xyletobius on Oahu, with Descriptions of New Species (Coleoptera: Anobiidae) "; and Dr. Hardy presented by title "Notes and Descriptions of Australian Fruit Flies (Diptera: Tephritidae)."

NOTES AND EXHIBITIONS

Mr. Keck exhibited a piece of Douglas fir badly infested with *Coptotermes formosanus* Shiraki; this was to demonstrate the ineffectiveness of surface applications of 5 per cent pentachlorphenol which had been made to this wood about a year before. After a discussion concerning proposed changes in the municipal building code a committee was appointed to look into the proposal and report back to the Society at the next meeting. Appointed to this committee were Dr. Bess, Dr. Sherman, and Mr. Keck.

ANOPLOLEPIS LONGIPES (Jerdon)—Mr. Clagg reported the presence of this recently established ant in Navy Housing Area III.

FRUIT FLIES—Mr. Steiner submitted the following: An interesting comment relative to fruit flies has come to our attention. It was made by W. W. Froggatt in 1909 in his "Report on Parasitic and Injurious Insects for 1907-1908," published by the Department of Agriculture, New South Wales. After calling attention to the discovery by Howlett of the attraction of citronella oil to a fruit fly which he called *Dacus ferrugineus* he states: "One remarkable thing was that when we came to examine them we found that all the specimens were males. Further experiments right through the season should prove whether this is always the same, but even so, the destruction of all the males would soon lead to infertile females. If other oils can be found to attract other species, they can be mixed with poison or used in traps and will become very effective in controlling the pest."

Apparently this idea was never followed up. Neither Froggatt nor Howlett observed that the flies consumed citronella. It contains fractions that inhibit feeding so that the flies feed far less avidly than on methyl eugenol. This fact plus the general unavailability in 1907 of quick-acting, highly toxic poisons that would insure kill with a minimum of consumption would probably have prevented sufficient male annihilation to effect any noticeable control. Even with our present available poisons, citronella is a very poor attractant for poison bait-station use against *D. dorsalis.*

EUPELMUS CUSHMANI (Crawford)—Dr. Pemberton reported rearing this eupelmid from a larva of the anthribid *Araecerus fasciculatus* (DeGeer) found in a dry seed of *Bumelia* sp. in Honolulu on September 28. Though this insect has been previously recorded as a parasite of *A. fasciculatus* on the mainland United States, this is apparently the first time it has been observed parasitizing an anthribid in Hawaii.

SCAPHYTOPIUS LORICATUS (Van Duzee)—Two specimens of this cicadellid leafhopper were exhibited by Dr. Joyce. They were taken in a light trap August 17 at the Public Health Quarantine Station in Honolulu. Another specimen was taken in the trap on August 19. Identification was made by Dr. D. A. Young of the U.S. National Museum. This is a new record for these Islands. The North American distribution of this insect includes California, Arizona, and Texas. As far as known it is of no particular importance there.

GONIOPHYTO BRYANI Souza Lopes—On September 16 a specimen of this sarcophagid fly was taken in a light trap at the Quarantine Station by Dr. Joyce. Although this is a common species on the leeward islands of the Hawaiian chain, this is the first time it has been taken on Oahu.

Dr. Gressitt, recently returned from a trip to Europe, told of some of the decisions made by the Zoological Congress with respect to the Code of Nomenclature. He mentioned the excellence of a new book on entomological illustrating, "INSECTS CLOSE UP," by Dr. E. S. Ross of the California Academy of Sciences.

CHLORION THOMAE (F.)—Mr. Bianchi exhibited specimens of this neotropical fossorial wasp first collected by him on August 3 along the margin of Kaelepulu Pond in Kailua, Oahu. On September 23 he and Mr. Weber collected six females and 46 males in the same locality. This is a new species for the Territory. On September 23 both sexes were found flying rapidly in and out of a dense cover of Bermuda grass, with the females occasionally stopping to feed on the flowers of *Pluchea* or *Sesuvium*. Later Mr. Weber observed a female carrying an adult of the acridid *Oxya chinensis* (Thunberg).

CHEIRACANTHIUM sp.—Mr. Bianchi exhibited a male and a female of this poisonous spider, taken by him in ground litter at Kokee, Kauai, on August 15. This appears to be a new island record for this spider.

MEGOPIS (AEGOSOMA) REFLEXA (Karsch)—Mr. Ford exhibited three adult females and one male of this prionid, the largest endemic coleopteron known here. The specimens were taken in a dead stump of *Metrosideros polymorpha* on the Kawailoa trail, Oahu. One female lived for five days, during which time she deposited 39 eggs. Both eggs and a pupal cell in ohia wood were exhibited. This appears to be the first recorded capture of adults of this beetle since 1918.

Dr. Carter spoke of his work for the Food and Agricultural Organization of the United Nations in Ceylon. Cacao has a mild virus disease perhaps akin to the more virulent "swollen shoot" disease of the Gold Coast and, like it, having a reservoir in surrounding forest trees. *Helopeltis* bugs are a severe problem in cacao groves at times. Chili peppers, an important local crop, have their own complex of insects. Rice, except for the problem of stem borers, appears to enjoy fairly satisfactory insect control.

APANTELES BEDELLIAE Viereck—Mr. Fullaway exhibited specimens of this braconid bred from *Bedellia* obtained on morning glory at Lanikai, Oahu, in October, 1953, showing that this parasite, introducd in 1945, is well established here.

The program closed with the exhibition by Mr. Flitters of his excellent Kodachrome movies of some of the commoner insects in Hawaii. Life history sequences were shown of the monarch butterfly, the black witch moth, *Achaea janata* (L.), eumenid wasps and several other insects.

NOVEMBER 9, 1953

The 575th meeting was held at the H.S.P.A. Experiment Station on Monday, November 9, at 2:00 p.m., with President Weber in the chair.

Members present: Adachi, Bianchi, Chilson, Chong, Clagg, Du Chanois, Ford, Fullaway, Gressitt, Hinman, Joyce, Keck, Look, Messenger, P. Nakagawa, Nishida, Rosa, M. Sherman, Steiner, Suehiro, Tuthill, Van Zwaluwenburg and Weber.

Dr. C. P. Clausen was unanimously elected to membership in the Society.

The committee appointed to suggest changes in the building code with respect to termites reported that it would be ready to report at the January meeting, having received assurance from City and County officials that the code will not be changed until after that date.

NOTES AND EXHIBITIONS

TENODERA AUSTRALASIAE (Leach) —Mr. Keck reported that a characteristic ootheca of this mantid was found at Aina Haina, Honolulu, on November 1; this is a considerable extension eastward of the known range of this recent immigrant.

CHEIRACANTHIUM sp.—Dr. Sherman reported a suspected case of bite by this spider. Mrs. Sherman was bitten on the hand; an irritated area about one-quarter inch in diameter resulted, with acute stinging pains running up the arm to the elbow. After a few hours the pain disappeared with no after-effects.

TEREDO INJURY—Mr. Ford exhibited for identification a piece of driftwood found on the beach which contained many holes. These were thought by members to be due to damage by these marine mollusks.

PERKINSIELLA VITIENSIS Kirkaldy—Mr. Chilson reported that the second heaviest infestation of this leafhopper on a plane arriving from Fiji was found by Mr. Ford at Honolulu Airport on June 17. The insects were very numerous; they were identified by D. A. Young of the U.S. National Museum.

POLIDIDUS ARMATISSIMUS Stal—Mr. Chilson exhibited a number of adults of this reduviid bug collected in a house at Pahoa, Hawaii, by Richard Sato on August 31. This is a new insect for the Territory. Identification was made by Dr. C. E. Pemberton by comparing specimens with named material in the H.S.P.A. collection. The insect occurs in Fiji as well as in the Philippines, Japan, China, and westward to Ceylon and India.

POLISTES EXCLAMANS EXCLAMANS Viereck—In a discussion of the spread of this vespid wasp on Oahu, Mr. Ford brought out the fact, until now unrecorded, that it is present at Barber's Point Naval Air Station. This is the farthest west the species has been found on this island.

DECEMBER 14, 1953

The 576th meeting was held at the H.S.P.A. Experiment Station on Monday, December 14, at 2:00 p.m., with President Weber in the chair.

Members present: Adachi, Balock, Barker, Bess, Bianchi, Carter, Chilson, Chong, Du Chanois, Ford, Hardy, Ito, Look, Newell, Nishida, Pemberton, Rosa, Sakimura, M. Sherman, Suehiro, Tanada, Tuthill, Van Zwaluwenburg and Weber.

Visitor: James Patterson.

The following officers were elected for the coming year:

President	L. F. Steiner
Vice-President	J. L. Gressitt
Secretary-Treasurer	F. A. Bianchi
Members of Executive Committee	P. W. Weber M. Sherman

In the absence of both the President-elect and the Vice-President-elect, Mr. Weber asked Dr. Tuthill to take the chair while he delivered the annual address of the retiring President, entitled "Studies on the Giant African Snail." At the conclusion of the address an interesting discussion followed on some of the points brought up in Mr. Weber's paper.

PAPER

Miss Adachi presented her paper by title: "Preliminary Studies in Hawaiian Dolichopodidae. Part II. The Genus Emperoptera Grimshaw."

NOTES AND EXHIBITIONS

PARASITES OF THE NATIVE OWL—Miss Adachi exhibited a collection of parasites collected from the "pueo" or native owl (*Asio flammea sandwichensis*). The bird had been injured by an automobile and was alive when brought in for examination. The hippoboscid fly,*Ornithoica pusilla* (Schiner), was found in great numbers around the head, especially in the ears, where the flies were probably breeding. Several puparia, as well as a large series of males and females, were collected from the ears. There was also a heavy infestation of lice, *Colpocephalum brachysomum* Kellogg and Chapman. The identifications are tentative, and specimens have been sent to specialists for verification.

UNIDENTIFIED WOODY GALLS—Dr. Hardy exhibited several galls in woody branches of an unidentified tree or shrub from Kauai. The galls were round in general and varied in size from about one-half inch to over two inches in diameter. Cross sections of some of the material gave no indication as to the cause of the malformations, and the insect involved, if it is an insect, remains unknown.

PROSTHETOCHAETA FASCIATA Grimshaw—Dr. Hardy called attention to a feature of the life history of this calliphorid fly which is most unusual in the family. The female gives birth to a mature maggot which soon forms a puparium much as hippoboscid flies do. *P. fasciata* is fairly abundant at elevations of over 3,000 feet, both at Kilauea, Hawaii, and in the Kokee region of Kauai.

Dr. Hardy discussed the matter of bringing up-to-date the common names list of Hawaiian insects, a project which seems to have lapsed after a period of interest some ten years ago. Chairman Tuthill requested Dr. Hardy to appoint and head a committee to revive the project.

APION ULICIS L.—In reply to a question, Mr. Weber stated that this gorse weevil had been liberated last in January, 1952, near Humuula, Hawaii, and that adults had been seen in the same locality in July, 1953. However, he pointed out that it is by no means certain that the individuals collected in 1953 were not some released some months before.

PROTAETIA FUSCA (Herbst) —Mr. Weber reported an unusual type of damage by this cetoniid beetle. He observed the adults consuming the leaflets of *Poinciana* trees at Waialae Ranch on Oahu. Heretofore this beetle has been reported to feed on flower blossoms of various kinds, on corn silk, and on rose buds.

Dr. Pemberton and Dr. Bess reported on the 8th Pacific Science Congress recently held in Manila. The meetings were well attended and entomological interest centered on the work in the Pacific on the coconut rhinoceros beetle and the giant African snail.

Dr. Carter and Dr. Hardy gave an account of the meetings in Los Angeles of the Entomological Society of America, which they attended. It was the first gathering of the newly amalgamated societies, and there was a great number of interesting papers.

DACUS DORSALIS Hendel—Mr. Steiner presented the following note on the abundance of oriental fruit flies in the Mariana Islands. On Guam, in June, 1953, a series of 44 plastic invaginated traps baited with methyl eugenol and a poison caught 3,260 oriental fruit flies, *Dacus dorsalis* Hendel, or 9 flies per trap-day. The traps were evenly distributed over the island. Catches were heaviest, 460 and 1,120 flies, respectively, at Urono and Taguan Points in "boondock" areas in north Guam. Approximately 80 per cent of the traps caught flies.

George D. Peterson continued operation of the traps on Guam through most of July and August. With the advent of the rainy season late in June, the catch increased to 54 flies per trap-day; in July it was 98, and in August, 43. He has taken more than 115,000 males since June.

On Saipan 20 traps caught an average of 36 oriental fruit flies per trap-day. Officials and farmers reported that they had reached the peak of their abundance on Saipan in 1951, when "mangoes were 100 per cent infested." On Rota 10 traps caught 1,280 of these flies in less than 24 hours. One picked mango was found to contain 30 nearly mature larvae. Several ovipositing females were seen.

No parasites were observed on any of the Mariana Islands. The principal hosts observed were wild papayas growing on jungle-covered abandoned farm land, and mangoes, breadfruit, avocado, and banana.

SPILONOTA HOLOTEPHRAS Meyrick—The bud moth *Spilonota holotephras* Meyrick has been credited with the biological control of guava, *Psidium guajava,* in the Mariana Islands, and the desirability of introducing this insect into Hawaii for this purpose has been considered several times. In June 1953 Mr. Steiner observed at least 150 guava trees in the Agana Heights residential area on Guam. These trees ranged up to 15 feet in height, and some appeared to be 6 to 10 years old. None was seen in other parts of the island. Nearly all had good crops of fruit ranging from ½ inch in diameter to mature.

Larvae, which appeared to be *Spilonota* on the basis of the type of injury, were present on nearly every guava plant. The injury was somewhat typical of that caused by a leaf roller, *Amorbia emigratella* Busck, in Hawaii. Many buds were attacked, but the damage was most severe to the older leaves near the terminals. The abundance of fruit provided clear-cut evidence that the insect had not prevented heavy fruiting. On the contrary, there were some indications that, by restricting terminal growth, it may actually have increased the fruiting potential.

On Rota the only guava plant seen was located on the highest elevation (1600 feet). This plant was also infested with the bud moth, but nevertheless it bore a heavy crop. On Saipan several fruiting guava plants of different ages, all with bud moth infestations, were observed.

These observations suggest that the reasons for the low incidence of guava trees in the Marianas need further study before introduction of *Spilonota* into Hawaii is seriously considered.